

PROCEEDINGS
OF THE
ACADEMY OF NATURAL SCIENCES
OF
PHILADELPHIA.
1870.

Jan. 4th, 1870.

The President, DR. RUSCHENBERGER, in the Chair.

Thirty members present.

PROF. LEIDY called the attention of the members to a curious fossil, which had been sent to him for examination last fall by Prof. Hayden. It was found in Colorado, and loaned to the latter by Dr. Gehrung, of Colorado City. Prof. L. remarked that when first received, the specimen strongly recalled to his mind the upper part of the face of the wonderful *Sivatherium* of the Sivalik Hills of India. It, however, presents so many peculiarities, that among other conjectures he thought it might have pertained to the pelvis of a chelonian, but had finally concluded that his first suspicion was the correct one. The specimen corresponds with that portion of the face of *Sivatherium* comprising the upper part of the nose together with the forehead and anterior horn cores. As is described to be the case in the corresponding portion of the skull of *Sivatherium*, all the bones comprising the fossil are completely coössified so as to leave no trace of the original position of the sutures. The nasal and contiguous bones are of great thickness, and as solid as those generally of the Sirenians. The animal to which the fossil belonged was nearly as large as the *Sivatherium*.

The horn cores are nearly like those of the latter in form, size, and relative position to each other. They are conical knobs, slightly trilateral, and with an obtusely rounded summit, which is more porous than the bone is elsewhere. They are moderately divergent, and their summits project more over their base externally than in *Sivatherium*. The space between the cores extending across the forehead forms a continuous concavity; and the surface from the end of the nose to the broken border of the fossil posterior to the cores forms a moderate convexity. In *Sivatherium* the corresponding surface from the slope of the forehead to the convex rise of the nasals forms a deep concavity.

The face, as formed by the nasals and their apparent conjunction with the maxillæ in advance of the horn cores, is very short in comparison with that of *Sivatherium*. The coössified nasals are proportionately shorter, broader,
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and stouter than in the latter animal. Their lateral borders are much more obtuse, and they terminate in a broad, thick, notched point. The ends bordering the notch are most thickened and porous, apparently indicating the attachment of a long moveable snout. The nasals do not rise from the forehead in the vaulted manner so conspicuous in *Sivatherium* and *Rhinoceros*, but, as previously indicated, simply continue the curvature of the forehead.

One of the most remarkable characters of the fossil is the greater extent backward of the lateral nasal notch than in *Sivatherium*. In this it ceases far forward of the position of the horn cores, situated above the orbits. In the Colorado fossil the notch continues back and beneath the position of the horn cores, where the nasals apparently become continuous with the maxillaries. The relative position of the orbits cannot be ascertained, as all the contiguous parts are broken away. They appear to have been situated behind the position of the horn cores.

Several measurements of the fossil are as follows:

Distance from the centre of the summit of one horn core to the other...	10½ in.
Length of horn cores above level of the intervening space.....	5 "
Length of lateral nasal notch.....	4½ "
Distance from end of nose to centre of space between the horn cores....	6 "
Breadth of nose midway between end and position of horn cores.....	4 "
Breadth of face, where narrowed, below horn cores.....	7¼ "

It is probable that the fossil may pertain to the same animal as the remains from the Manvaises Terres of Nebraska, described under the name of *Titanotherium*, but in the state of extreme uncertainty as to its collocation, it may with equal probability be referred to other genera, perhaps to *Megalomeryx*, or it may have been an American species of the *Sivatherium*. Under the circumstances it may be referred to a new genus, with the name of *MEGACEROPS COLORADENSIS*.

PROF. O. C. MARSH, of Yale College, exhibited a number of vertebræ of a new Dinosaurian from the cretaceous green sand near Barnsboro', N. J. He observed that they indicated a reptile allied to *Hadrosaurus Foulkii* Leidy, but only about one half the size of that species. The specimens, although all found in the same immediate neighborhood, were apparently portions of three different individuals, only one of which was fully adult. They consisted of several dorsal and lumbar vertebræ belonging to the Museum of Yale College, and an anterior caudal vertebra recently presented to the collection of the Academy by Dr. Leidy. These remains appear to be quite distinct from those already described, and apparently belong to the same species, for which Prof. Marsh proposed the name *Hadrosaurus minor*. Prof. Marsh also showed the tooth of a new and very large Mosasaurus from the cretaceous of North Carolina. It belonged to a very perfect right upper jaw, formerly in the collection of the late Dr. Emmons, and now in the cabinet of Williams College. The teeth of the specimen are remarkably short and thick, nearly round at the base and their surface entirely without facets. The remains preserved indicate a species of great size, probably sixty feet in length, but with a head and muzzle comparatively short. It was named *Mosasaurus crassidens*.

A peculiar caudal vertebra of a somewhat similar reptile from the lower cretaceous marl bed, near Hornerstown, N. J., was likewise exhibited. It is one of a series in the museum of Yale College, and indicated a new *Mosasaurus* of medium size, apparently belonging to the genus *Leiodon*. The articular surfaces for the attachment of the chevron bones were in nearly the same plane as the lower surface of the vertebræ, and not impressed as in *Macrosaurus proriger* and other allied species. The presence of well developed diapophyses in this part of the caudal series was another peculiarity of these vertebræ, and indicated that the animal had a broad, muscular tail. The species was therefore named *Leiodon laticaudus*.

Prof. Marsh stated in this connection that in the November number of Silli-

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man's Journal he had proposed the name *Halisaurus* for a new genus of Mosasauroid Reptiles, but as *Halosaurus*, essentially the same word, had previously been given to a genus of fishes, he wished to substitute for the former the name of *Baptosaurus*.

Prof. Marsh also showed a tooth of a rhinoceros from the miocene of Squankum, N. J., which was the first authentic evidence of this animal east of the Mississippi River. It was found in the pits of the Squankum Marl Company, in the same layer with the remains of the *Elotherium Leidyanum* Marsh, and was presented to the Yale Museum by Mr. O. B. Kinne. The tooth was the last molar of the left under jaw, and indicated an animal about two-thirds the size of the living Indian species. He proposed for it the name *Rhinoceros matutinus*.

Jan. 11th.

The President, DR. RUSCHENBERGER, in the Chair.

Twenty-five members present.

PROF. LEIDY directed attention to some fossils, on which he made the following remarks:

1. A specimen consisting of less than the half of a vertebral body, was submitted to my examination by Prof. Hayden, who obtained it last summer during his geological survey. It is from Middle Park, Colorado, and Prof. Hayden thinks was derived from a cretaceous formation. Similar specimens were reported to be not unfrequent, and were known under the appellation of "petrified horse hoofs." The fossil indicates an elongated form of caudal vertebra of some large saurian. Much constricted towards the middle, such specimens would be most liable to break in this position, and the halves from their form might readily be taken, by the inexperienced in such matters, for what they are called.

The vertebral body in its entire condition would resemble in form those of *Megalosaurus*, but in form and other characters bears a near resemblance to those of *Poicilopleuron Bucklandi*. This is an extinct reptile from the oolitic formation of Caen, in Normandy, described by Deslouchamps; and remains apparently of the same animal from the Wealden of Tilgate, England, have also been described by Prof. Owen.

Poicilopleuron has generally been viewed as a crocodilian reptile with biconcave vertebrae, but probably pertains to the dinosaurs. The *P. Bucklandi* is estimated by Deslouchamps to have been about 25 feet long. The Colorado fossil indicates a much larger animal, having been more than one-third greater.

One of the most remarkable characters of the *Poicilopleuron* is the presence of a large medullary cavity within the bodies of the vertebrae, paralleled among living animals, so far as I know, only in the caudal vertebrae of the ox. The same character is presented by the Colorado fossil. In the former animal the cavity appears simple or unobstructed by osseous trabeculae. In the Colorado fossil, as seen in the broken surface of the specimen, the medullary cavity occupies the lower two thirds of the interior of the body and is crossed by a few trabeculae. The sides of the cavity, converging below, are constituted by a layer two lines thick and as compact as the walls of the medullary cavity in the limb bones of most ordinary mammals. The upper third of the interior of the body is occupied by the ordinary spongy substance which becomes more compacted ascending into the interior of the neural arch. The cavernous structure of the Colorado fossil is occupied with crystalline calcite.

The estimated length of the vertebral body is six inches or more. The sides are much narrowed towards the middle, and they are concavely depressed just below the sutural conjunction of the neural arch. A narrow groove occupies

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